## The Pine Creek Water Water Quality Project:

# Building a Better Future

Through the cooperation and dedication of conscientious landowners, Pine Lakes is proof that production agriculture and recreational waters can co-exist.

By the early 1990s, the water in Pine Lakes may have been murky, but the eventual fate of the two lakes was unmistakably clear. If nothing was done, the Hardin County lakes created more than a half century ago by impounding water from Pine Creek, would eventually choke to death on the rich, Iowa soil of the watershed. The degradation had even reached the point where it could be quantified on the 75-acre Upper Pine Lake. By 1991, studies indicated that Upper Pine would be completely filled with sediment in less than 45 years. Lower Pine Lake, Iowa's first man-made, state-owned lake, had also lost nearly half of its original volume.

Doing nothing was not an option. Pine Lakes and the surrounding 572-acre state park draws approximately 500,000 visitors annually.

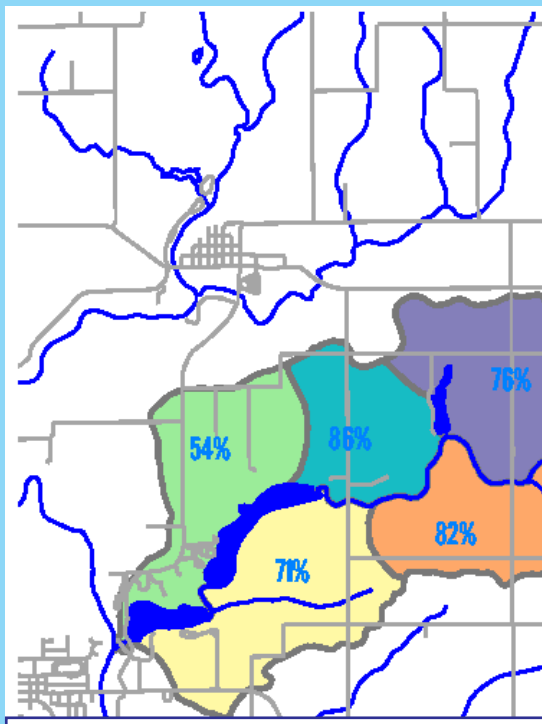
To most of us, the remedy would seem quite obvious. Dredging the lakes to remove the excess sediment would appear to be the logical course of action. Unfortunately, dredging was just treating a symptom of the overall problem. Making the effort to take accumulated sediment out of the lakes would only be worthwhile if significant reductions in the amount of soil coming in could be accomplished.

The concentrated effort made by the Pine Creek Water Quality Project has produced results that can be seen by the eye and measured by the calculator. The water is cleaner for swimmers and more productive for anglers. The amount of sediment flowing into the lakes has been reduced by 66 percent extending the life of Upper Pine Lake alone by over 100 years.

Perhaps the greatest accomplishment of all, however, has been the lesson learned. Through the work and commitment of dedicated landowners in the watershed to make a positive difference, Pine Lakes is a shining example of how the quality of our recreational waters can co-exist with the most fertile and efficient food production system in the world.

# Pine Lakes: Improving Our

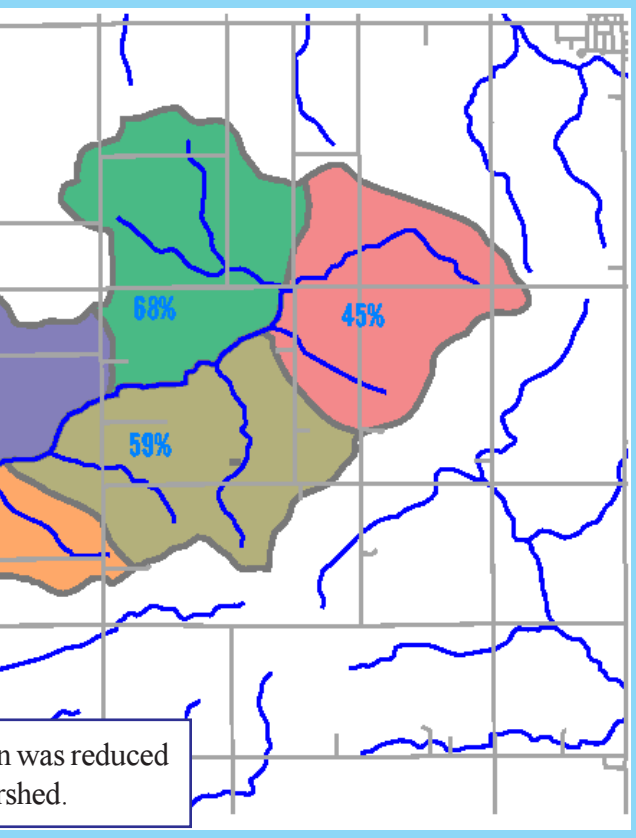
By implementing a variety of soil conservation measures on their land, farmers within the watershed have reduced the amount of sediment flowing into Pine Lakes by 66 percent. Their actions, in combination with dredging to remove accumulated sediment from the lakes, ensure these lakes will remain as valuable recreational resources for Iowans long into the future.




This map shows the percentages that erosion in the different areas of the Pine Lakes water

Sometimes dredging is the only answer for years of accumulated sediment in our lakes. Dredging done by the Iowa Department of Natural Resources in 1997 removed 140,000 cubic yards of sediment from Lower Pine Lake and another 40,000 cubic yards from Upper Pine Lake.

# r Land and Water Together

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Practices such as streambank stabilization (above) and terracing (below) have significantly reduced the amount of eroded soil reaching Pine Lakes.

## Measuring the success

| Practices Implemented | Area | Soil Reduction |
|---|---|---|
| Grassed waterways | 60,888 feet | 2,210 tons |
| Terraces | 17,190 feet | 1,042 tons |
| Sediment basins | 11.7 acres | 732 tons |
| Grade stabilization structures | 16.6 acres | 437 tons |
| Streambank stabilazation | 16.6 acres | 505 tons |
| Critical area seeding | 2 acres | 38 tons |
| TOTAL | | 4,964 tons |

# Pine Lakes:

# Proving What Can Be Done

## Through dredging and watershed management, the DNR has both improved and protected Pine Lakes for years to come.

Pine Lakes is an excellent example of a combined resource enhancement and protection effort by the Iowa Department of Natural Resources.

During this decade alone, the DNR has restructured the bottom of the lakes for better fishing habitat, dredged them to increase volume and funded the efforts to reduce erosion through the Pine Creek Water Quality Project.

These efforts have resulted in the removal of over 179,000 cubic yards of sediment from Upper and Lower Pine Lakes. Dredging increased the average depth of five to seven feet in Upper Pine to 12-14 feet throughout a large portion of the lake. Lower Pine Lake now has a depth of approximately 15 feet in its west end compared to eight to 10 feet prior to the dredging.

Overall, the Pine Creek Water Quality Project has reduced the amount of sediment coming into the lake by over 4,000 tons per year.

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